

CLAIMS

I claim:

1. A method of manufacturing lead frame connectors for use in connecting an optical sub-assembly to a printed circuit board of an optical transceiver module, comprising:

stampng a selected configuration of conductors in a conductive ribbon;
passing the conductive ribbon through an insert injection molding process; and
singulating the conductive ribbon into individual lead frame connectors

having:

a plurality of electrical contacts that correspond to and can be connected to leads of the optical sub-assembly; and

a plurality of leads that correspond to and can be connected to conductive structures on the printed circuit board.

2. A method as defined in claim 1, wherein the conductors that correspond to an individual lead frame connector are internally stabilized using a conductive structure prior to singulation, the method further comprising punching the conductive structure from the lead frame connector.

3. A method as defined in claim 2, wherein punching the conductive structure from the lead frame connector comprises punching the conductive structure through a hole formed in an electrically insulating casing formed about the conductors during the insert injection molding process.

4. A method as defined in claim 1, wherein passing the conductive ribbon through an insert injection molding process comprises passing the conductive ribbon from one reel to another reel.

5. A method as defined in claim 1, further comprising, prior to passing the conductive ribbon through the insert injection molding process, bending the conductors of the conductive ribbon such that the plurality of leads are oriented in a direction that is not parallel to a plane defined by the plurality of electrical contacts.

6. A method as defined in claim 1, further comprising connecting an optical sub-assembly to a printed circuit board of an optical transceiver module using the lead frame connector.

7. A method as defined in claim 6, wherein connecting the optical sub-assembly to the printed circuit board comprises:

connecting the plurality of electrical contacts of the lead frame connector to corresponding leads of the optical sub-assembly to obtain a combined structure that includes the lead frame connector and the optical sub-assembly; and

connecting the plurality of leads of the lead frame connector to corresponding conductive structures on the printed circuit board.

8. A method as defined in claim 7, wherein the optical sub-assembly is a transmitter optical sub-assembly.

9. A method as defined in claim 7, wherein the optical sub-assembly is a receiver optical sub-assembly.

10. A method as defined in claim 1, wherein the selected configuration of conductors is selected to achieve a desired RF response of the lead frame connector when used in the optical transceiver module.

WORKMAN NYDEGGER
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

11. A method of manufacturing lead frame connectors for use in connecting an optical sub-assembly to a printed circuit board of an optical transceiver module, comprising:

stampng a selected configuration in a conductive ribbon, the conductive ribbon including a plurality of conductors electrically connected by a conductive connecting structure;

passing the conductive ribbon through an insert injection molding process so as to form an electrically insulating casing about the conductors;

singulating the conductive ribbon into individual lead frame connectors having:

a plurality of electrical contacts that correspond to and can be connected to leads of the optical sub-assembly; and

a plurality of leads that correspond to and can be connected to conductive structures on the printed circuit board; and

electrically separating the plurality of conductors one from another by punching out the conductive connecting structure through a hole formed in the casing.